

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

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#### (PCT Article 36 and Rule 70)

Applicant's or agent's file reference GCO 9911	FOR FURTHER ACTION  See Form PCT/IPEA/416	
International application No. PCT/GB2004/001178	International filing date (day/month/year) 18.03.2004	Priority date (day/month/year) 19.03.2003
International Patent Classification (IPC) or national classification and IPC B01J19/08, B01J8/22		
Applicant BP EXPLORATION OPERATING COMPANY LIMITED et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> <i>(sent to the applicant and to the International Bureau) a total of sheets, as follows:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> <i>(sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</i></p>		
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>		
Date of submission of the demand 20.09.2004	Date of completion of this report 04.02.2005	
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Thomasson, P Telephone No. +49 89 2399-8339	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/001178

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-11 as originally filed

**Claims, Numbers**

1-9 as originally filed

**Drawings, Figures**

1-5 as originally filed

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

- The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
- This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-9
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-9
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. It is clear from the description as a whole, especially from figures 1 and 2, that the following feature is essential to the definition of the invention:

- (1) the first and the second electrodes occupy the **internal cross section** of the conduit.

If this feature is not provided, for example in the case that the first and the second electrodes are parallel to the conduit, no electrical field would be present in the conduit for trapping the particles. Since independent claim 1 does not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

2. Closest prior art.

D1 (WO95/30726) discloses an apparatus and the corresponding method for the removal of catalyst particles from a Fischer-Tropsch slurry. An electric field is being generated so that the catalyst particles **agglomerate** and are removed by gravity (see D1: page 12, first paragraph, figure 2 and claim 1).

3. Novelty.

The subject-matter of claim 1 differs from D1 in that (1) the conduit which supports the electrodes is **electricity conductive** and in that (2) the first and the second electrodes are connected to the conduit such that electricity can pass between the electrodes **via the conduit**.

4. Inventive step.

The technical problem to be solved against D1 is to improve the separation of the catalyst particles from the Fischer-Tropsch reactive slurry. The apparatus according to claim 1 allows to trap the catalyst particles between the two electrodes, so that these particles can be easily laterally removed from the slurry

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(see the present application on page 2, lines 21-32 and on page 3, lines 17-29).  
The main advantage over D1 is that the catalyst particles do not have to be  
agglomerated, so that clogging of the apparatus can be avoided. Since D1 neither  
discloses nor suggests the technical features of claim 1, the inventive step can be  
recognized.